

<p style="text-align: center;">NATIONAL EMERGENCY SERVICES ACADEMY, CIVIL AIR PATROL MISSION AIRCREW SCHOOL OBSERVER/MISSION PILOT TRAINING FLIGHT #4 EXPANDING SQUARE INSTRUCTOR B Flight / Area B</p>
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PRE-EXERCISE PLANNING

This exercise requires that the trainee plan an expanding square search prior to the exercise (i.e., homework). The trainee should use an St Louis sectional to plan this exercise. The trainee should have planned for:

1. A expanding square search in St Louis 79 D, entering N 39 21' W 085 18', and use GPS.
2. Search should be conducted at 1000' AGL, 1nm track spacing, and 90-100 kts.
3. Determine the lat/long of the entry and exit points. In addition, the entry and exit points should be fixed using VOR cross-radials. [SHB 128, RID 229]
4. Determine the magnetic heading and distance (nm) from BAK to the entry point.
[078, 24.5 nm]
5. Determine the VOR cross radials to the entry point.
6. Determine the inbound course from the exit point to the SHB VOR.
7. Mark your sectional accordingly.

A. PRE-FLIGHT BRIEFING

1. Sign in personnel, aircraft, and vehicles. Use mission flow chart
2. Have the trainee discuss the observer's duties during:
 - a. Preflight and taxi
 - b. Departure
 - c. Enroute
 - d. Approach and landing

NATIONAL EMERGENCY SERVICES ACADEMY, CIVIL AIR PATROL
MISSION AIRCREW SCHOOL
OBSERVER/MISSION PILOT TRAINING FLIGHT #4 EXPANDING SQUARE
INSTRUCTOR
B Flight / Area B

3. Discuss purpose of the flight:
 - a. How to plan and execute an expanding square search, with emphasis on navigational aids and the use of navigation equipment.
 - b. Locate the following navigational equipment and discuss their use:
 - 1) VOR
 - 2) ADF
 - 3) DME
 - 4) GPS
 - c. Assist the pilot with navigational aids:
 - 1) Setting and verifying proper frequencies for VOR, ADF, and DME
 - 2) Setup of audio panel pushbuttons
 - 3) Initial setup of the GPS
4. Discuss use of the GPS, VOR, and DME during searches.
5. Review the trainee's planning and correct as necessary.
6. Initiate a 104. Have the trainee enter the required information.
7. Have the observer trainee give the aircraft passenger and safety briefing:
 - a. Demonstrate use of safety belts and harnesses
 - b. Identify emergency exits
8. Have the trainee set up the proper communications frequencies for the CAP radio, DF, ATIS, clearance delivery/ground, tower, and departure control. Demonstrate setup of the audio panel. Then have the trainee:
 - a. Set up the audio panel switches.
 - b. Obtain ATIS information.
 - c. Handle communications with clearance delivery/ground, tower, and departure control.
 - d. Give wheels up, time in the grid, time out of the grid, and wheels down reports.

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B. EXPANDING SQUARE SEARCH

During the flight, the trainee should concentrate on learning to use the aircraft navigational aids. The trainee should also handle as much of the communications load as practical during this exercise, but this is of secondary importance (however, the trainee should report wheels up, time in the grid, time out of the grid, and wheels down).

1. Enroute to the expanding square search entry point, fly at cruise speed and 1000' AGL. Demonstrate operation of the ADF. Demonstrate use of the DME, VORs, and GPS when flying to the entry point.
2. Conduct a normal expanding square search pattern, but let the trainee verify proper tracking per ground reference and GPS. Have the trainee notify the pilot when its time to turn and in which direction to turn.
3. Have the trainee practice position determination by use of VOR cross-radials.
4. Have the trainee transfer a VOR cross radial and GPS lat/long position onto the sectional chart.

C. RETURN TO BASE

1. Have the trainee determine the proper heading for the return to BAK, and let the trainee set up the navigational instruments as necessary.
2. Have the trainee handle communications with approach, tower, and ground control.

D. DEBRIEFING

1. Answer any questions.
2. Let the trainee provide the information for the debriefing (104).
3. Sign the trainee's qualification card or 101-T.
4. Briefly discuss Observer Training Flight #3.